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**ATSDR LEAD AND CADMIUM  
EXPOSURE STUDIES**

**DEBRIEFING**

**December 3, 1991**

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M I D W E S T   R E S E A R C H   I N S T I T U T E



**ATSDR LEAD AND CADMIUM  
EXPOSURE STUDIES**

**DEBRIEFING**

**December 3, 1991**

# **ATSDR Lead and Cadmium Exposure Studies**

**Debriefing on the Activities Conducted by  
Midwest Research Institute  
in Support of the  
Multistate and Pennsylvania  
Lead and Cadmium Exposure Studies**

**December 3, 1991**

*ATSDR Lead and Cadmium Exposure Studies*

# Objectives

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- To collect, process, store, and transport blood and urine specimens from study participants to CDC/CEHIC for lead, cadmium, FEP, AAP, GGT, NAGA, creatinine, and immunological analyses.
- To provide analysis services and QA/QC oversight for routine blood and urine tests, using local hospitals and Roche Biomedical Laboratories in Kansas City, MO
- To provide comprehensive and traceable data to ATSDR, utilizing standard QA/QC procedures to determine the quality of the data

## **Site**

## **Dates of Collection**

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- **Multistate**

**Joplin, MO**

**July 16–August 27, 1991**

**Galena, KS**

**Sept. 10–30, 1991**

**Granite City, IL**

**August 22–Sept. 20, 1991**

- **Palmerton, PA**

**Sept. 7–29, 1991**

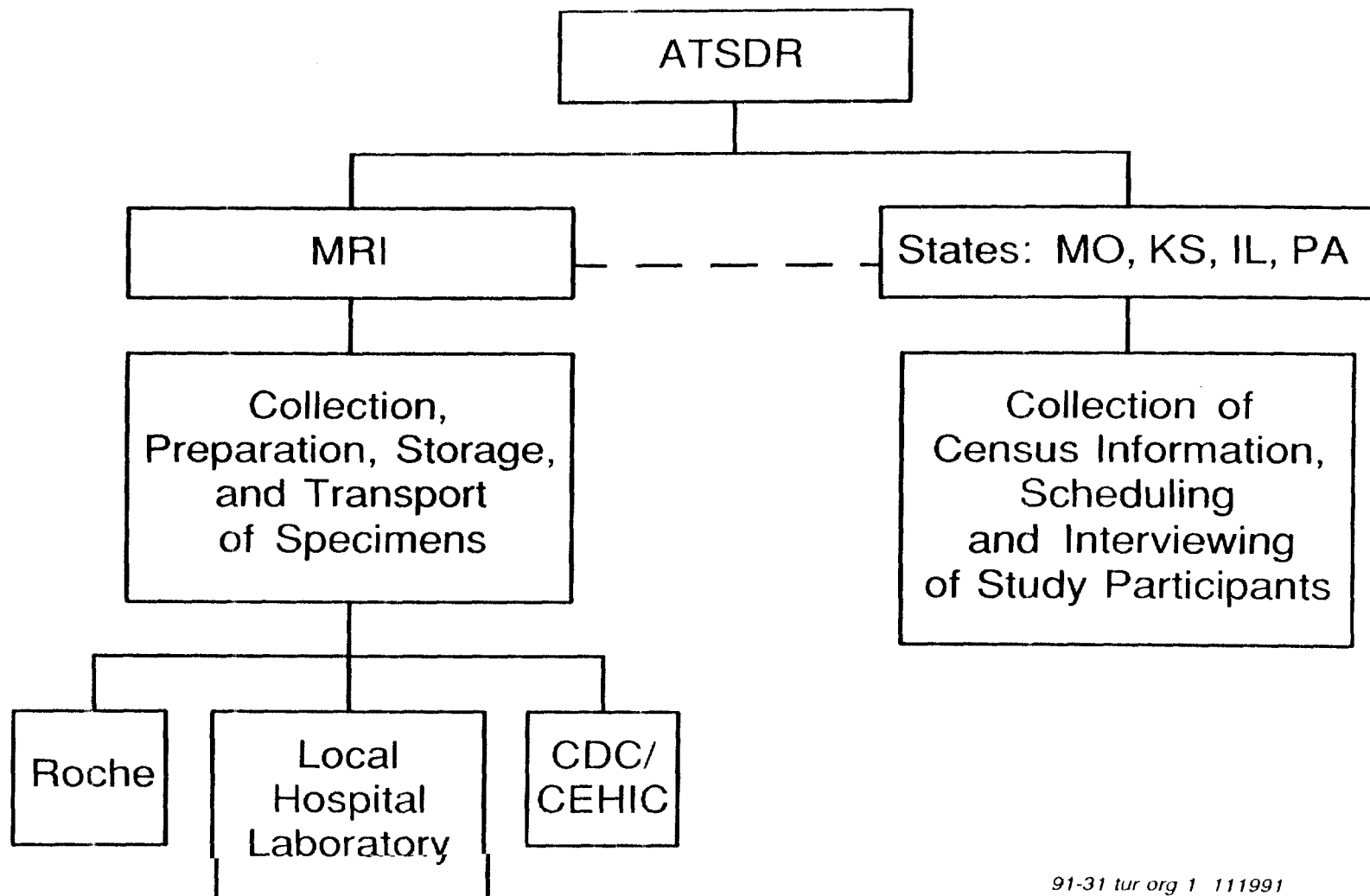
# **Midwest Research Institute's Role**

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- **Division of Health Studies contractor to provide laboratory services**
- **Contract No. 205-90-0839**
- **Supported both the Multistate and Pennsylvania studies**
- **Contractual restrictions regarding travel and subsistence required the use of local labor**

# Project Organization

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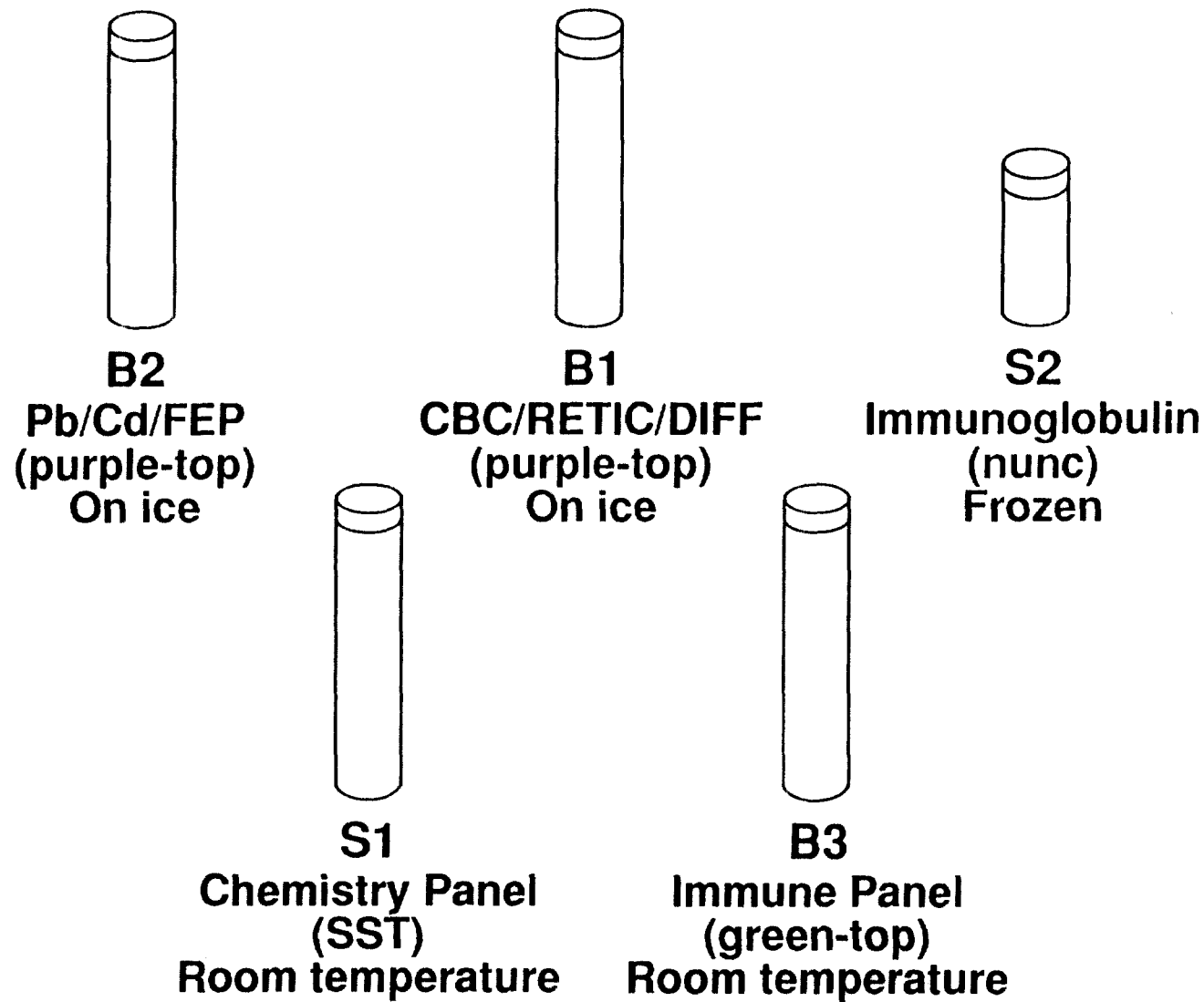


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***ATSDR Lead and Cadmium Exposure Studies***

# Blood Collection

(in order of collection)



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# Urine Processing

(in order of priority)



**T1**  
**Cd**  
**(blue cap)**  
**Frozen**



**T2**  
**GGT/AAP**  
**(orange cap)**  
**Frozen**



**U1**  
**NAGA/Creatinine**  
**Frozen**



**Albumin**  
**(nunc)**  
**Frozen**



**B-2-microglobulin**  
**(nunc)**  
**Frozen**

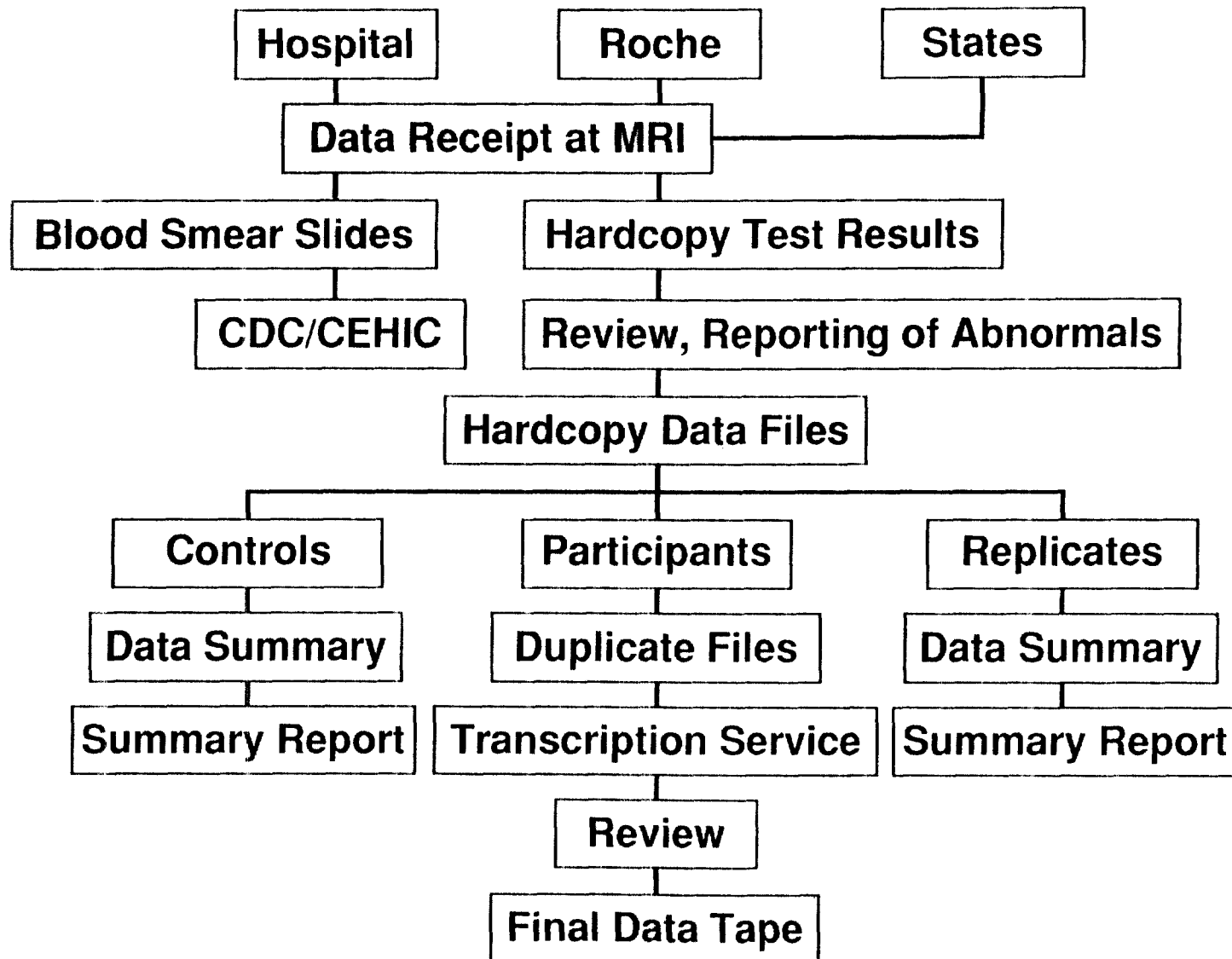


**U2**  
**UA**  
**On ice**

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# Data Flow at MRI

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# Summary Results

Site	No. of Participants	CBC	UA	Chemistry	Reticulo- cyte	Differen- tial	Controls	Repli- cates
<b>Multistate</b>								
Joplin, MO	701	644	616	639	631	380	97	78
Galena, KS	163	146	155	147	144	122	48	34
Granite City, IL	840	770	498	721	787	764	122	86
Subtotal	1,704	1,560	1,269	1,507	1,562	1,266	267	198
<b>Palmerton, PA</b>	539	530	484	521	530	518	95	60
Total	2,243	2,090	1,753	2,028	2,092	1,784	362	258

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# Summary Results (%)

Site	CBC	UA	Chemistry	Reticulo- cyte	Differen- tial	Controls	Repli- cates
<b>Multistate</b>							
Joplin, MO	92	88	91	90	54	13.8	11.1
Galena, KS	89	95	90	88	75	29.4	20.9
Granite City, IL	92	59	86	94	91	14.5	10.2
Overall	92	74	88	92	74	15.7	11.6
<b>Palmerton, PA</b>	98	90	97	98	96	17.6	11.1
Overall	93	78	90	93	80	16.1	11.5

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# Redraws

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- **Multistate**
  - **Joplin, MO**                      September and November, 1991
  - **Galena, KS**                      planned for December, 1991
  - **Granite City, IL**                  planned for December, 1991
- **Palmerton, PA**                  planned for December, 1991

# **Records**

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- **End of Project**
  - **Data tape for each site to ATSDR**
  - **Hardcopy test results maintained at MRI**
  - **Manual differential slides to CDC/CEHIC**
  - **Data Summary Sheets to ATSDR**

# **Lessons Learned/ Recommendations**

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- **Precollection**
- **Collection**
- **Analysis**
- **General**

# **Precollection**

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- **Additional Up-front planning**
- **Work Plan, Protocol prior to initiation of study**
- **More extensive prestudy site visits**
- **Paperwork**



# Collection

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- **Staff**
- **Facility**
- **Supplies**
- **Scheduling**
- **Transport**

# **Analysis**

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- **Clinical Chemistry Support**
- **Data Management**
- **Quality Assurance/  
Quality Control**

# **General**

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- **Improve communication on-site**
  - **Scheduling**
  - **Numbering of quality control specimens**
- **Optimal spacing of specimen collection for multiple studies should be considered**



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